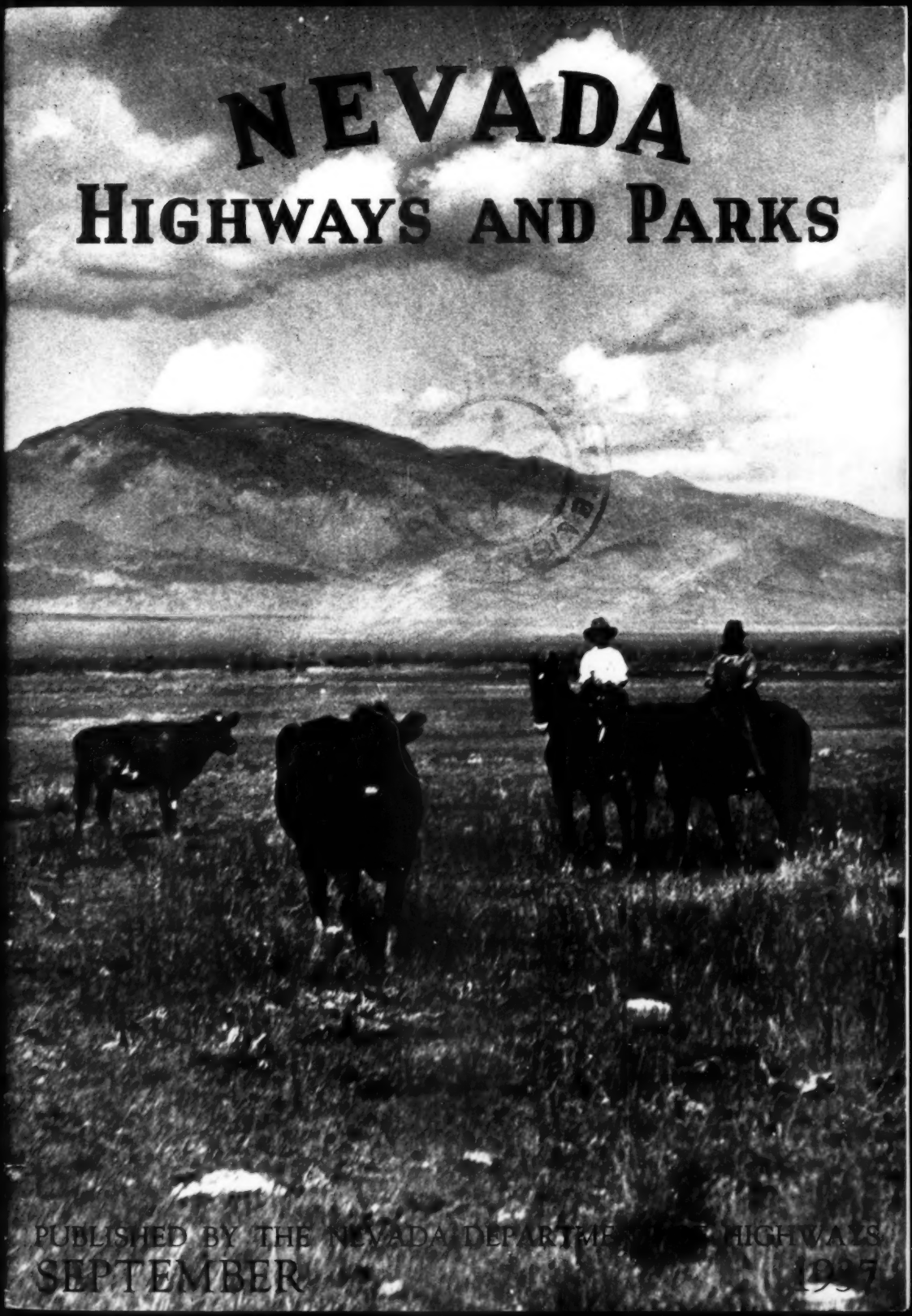
NEVADA
HIGHWAYS AND PARKS



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Herefords in droves, conspicuous by their white faces, feed on the lower range lands as well as on the mountain slopes where nourishing grasses and plants supply the needed forage for conditioning. These Elko County beef cattle will eventually reach the various markets.

A bunch of Texas longhorn steers in the pens awaiting shipment to the packers is shown in the above reproduction. Cattle of this kind, in large numbers, are no longer found on the open ranges of Nevada, having been replaced mainly by the Hereford breed of cattle.

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NEVADA HIGHWAYS AND PARKS

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NEVADA RANGES SUPPLY MUCH BEEF

SUPPLYING cattle to the various markets for beef stews, juicy sirloin steaks, high-topped boots or dainty leather slippers constitutes a Nevada industry of major proportions, involving hundreds of thousands of domestic cattle, hundreds of cowhands and rangers to handle them, and represents millions of dollars in money invested. Under normal conditions approximately 65 percent of the agricultural income of Nevada is derived from grazing sources. Of these sources, cattle grazing and marketing brings in by far the greater annual revenue.

Over a broad expanse of far-flung ranges extending from one end of the State to the other, beef cattle of prime and carefully blended stock graze on the unfenced wide-open spaces, browsing grasses and nourishing plants for sustenance and fattening before starting on the final journey to the dinner table and the shoe factory. Individual animals comprising these herds show brand marks with a variety of design and meaning, sometimes puzzling to the uninformed, but providing, for the owners, a positive hide-print identification. Brand marks always carry a specific interpretation, and frequently these markings have been inspired by a romantic or historic background.

The vast empire of the Sagebrush State comprising 71,190,470 acres of land surface and 556,166 acres of water surface equals in size about twice the area of the whole of the New England States. Public domain acreage embracing the principal grazing grounds covers thousands of square miles of territory and includes a far greater proportion of the whole State land area than can be found in any other State. Here, in Nevada, through the years, cattle owners and rangers have built up and carried on the industry until it has attained and held a position of importance equal to mining. Furthermore the livestock industries provide the only source of income in a large portion of the State.

Not so many years ago it was a common thing to find herds numbering 10,000 to 15,000 animals belonging to single ownership outfits feeding on the various Nevada grazing grounds, displaying the same brand mark. These herds roamed the unfenced lands on "Cattle Empires" covering areas as large as some of the smaller eastern States, at a time when romance and adventure was in its hey day throughout the "wild and wooly" West. In recent years these conditions have changed. Many of the "cattle empires" have been broken up into smaller units, although herd units in impressive numbers still dot the landscape all over Nevada.

Because of their hardihood and ability to thrive in the higher altitudes, Herefords or

NEVADA, one State without an income tax, a corporation tax, an inheritance tax, a gift tax, a sales tax. With cheap power, and liberal mining, corporation, taxation, and other laws. WELCOME TO NEVADA.

Two views of Nevada beef cattle grazing on range lands typical of White Pine, Eureka, Lander, Humboldt and Pershing Counties in the northern and eastern sections of the State. Lower picture shows a group of shippers in the pens awaiting the trip to the meat market.

white-faced cattle, predominate on Nevada ranges. Other hardy breeds in lesser numbers, however, are found mingled with the Herefords and constitute an important part of the Nevada beef cattle supply.

Most of the Nevada cattle graze on lands in the northern and central sections of the State, particularly during the summer and autumn months when climatic and forage conditions are more favorable. When winter comes some of the herds are driven to the southern counties to escape the severe weather, while many other thousands of cattle are carried through the cold season on the fenced ranch lands in the valleys adjacent to the established ranch homes. These valleys produce forage crops normally sufficient for the carry-over period.

Accessibility of markets through improved rail and highway transportation facilities has likewise aided in the expansion of the industry.

Obviously such numbers of domestic animals require handling and care. Herding within grazing right limitations, finding and development of new and adequate watering places, rounding up the strays, branding the calves, driving cattle to the railhead or to more suitable grazing grounds, and holding the animals in a more or less compact mass include just a few of the duties of the range rider's routine. Other chores around ranch buildings, or central corrals, either in the field or at the home stations also tend to keep cowhands pretty well occupied.

Western lore frequently portrays and widely heralds the cattle range rider as a carefree and happy lot. Crooning cowboys possessing soft, melodious voices that charm and soothe the restless "dogies" while bedded for the night, still afford interesting subject matter for both story and song. Romance, adventure and freedom of action on the open range are thrillingly woven into the tales of the West.

If life in the open, through all kinds of weather, spending long, tedious hours in the saddle and plenty of hard work, brings on this carefree and happy state, then, indeed, the range rider can revel in his appellation.

The old West as typified in the hard-riding cowpuncher, sporting a vividly colored shirt and neckpiece, broad sheepskin chaps (these have now mostly been replaced by blue denims), ten-gallon hats high-heeled boots trimmed with long-pronged spurs, still rules on Nevada's vast grazing ranges. The wind-tanned cowpuncher who throws a swift and accurate lariat while sitting astride the hand-tooled leather saddle, on a fast stepping broncho, is still extant, glories in and practices the traditional skill of lassoing, and is just as expert now as in the days of the past. Steer roping, bulldogging, and "broncho busting" likewise remain an exciting part of the routine life on the range. Seasonal roundups for branding and culling are necessary, while colorful rodeos with all the glamour and excitement peculiar to the West continue to be closely linked with cattle grazing and herding in the mass. In fact, the industry retains most of its true western atmosphere vibrating with thrills and daring. Nevertheless, 1937 range life is not the same as it was during the pioneer days. It has been fired with the brand of modernism.

OUR COVER ILLUSTRATION

TERRAIN in Nevada consists of a series of mountain ranges with long and broad intervening valleys. These ranges strike generally northeast and southwest, and upon the slopes of the hills and the valley floors cattle graze on the abundant forage crops. The cover picture shows a typical Nevada scene.

The romantic, book-pictured West as now found in Nevada has been seasoned with spices represented in high speed motor cars, radios, power washers, and mechanical coolers for the family and ranch house; motor trucks, tractors and machinery of the latest models to take care of the heavier range routine; while electric lights, telephones, and better roads have steadily penetrated into many of the outlying sections of the great open spaces, breaking down the barriers of isolation and, at the same time, providing greater comforts and easier communication with neighboring outfits—although these outfits might, even today, be many miles distant. Another result from this modernization has been a more friendly social environment with a wholesome influence.

The old style, rip-roaring cowhand who, filled with "firewater" and an irresistible impulse to yip and howl, while exercising an exuberant diversion in scaring the daylights out of a tenderfoot or "dude" by

This Carson Valley young woman, a 4-H Club member, stands proudly beside her Nevada blue ribbon prize winning Hereford steer in the yards at the Stock Growers Exhibition in San Francisco. She seems to be the envy of the boys, entrants in a similar contest.

cutting loose with blazing sixshooters, operating right- and left-hand drive, has all but passed out of the picture. This eccentric, but harmless, western type has faded out and is known and remembered chiefly by his past deeds.

Coincidentally, the practical but old-fashioned buckboard drawn by a span of heavy harnessed, spirited horses, secretly drawn into service upon occasions such as the elopement of a daring cowhand with the ranger's daughter, or driving to the railroad station to bring home "dudes" or the city cousin, is rarely seen nowadays, for the rattling contraption has been relegated to the rear of the hayloft or cattle barn to shrink and shrivel as the years pass on. It serves now only as a reminder of what some folks are apt to call "the good old days." And to view with delight swains dashing away from the range corral on their finest saddle horses, in the full of the desert moon, bound for a charivari or dance fifteen or twenty miles distant is an event which has also become obsolete. The cowhand might still be on friendly speaking terms with the ranger's daughter; charivaris and dancing remain popular diversions for the younger folks, but the picturesque old horse-and-buggy methods of traveling have become too slow, and have all yielded to the modern streamlined six or eight cylinder sedan with radio dials and heater attachments.

The 1937 West, as we find it on the Nevada ranges, has not gone sissy—it has merely kept pace with modern developments.

On the widespread cattle ranges, outfit brands are still seared into the hides of the struggling young calves with regularity each season. Attempts have been made during the past few years to modernize this hide-printing by substituting acid for the branding iron, but the innovation has not proved entirely successful.

Rodeos, typically western and mighty good reasons for spending a day or two in town, are more popular and better than ever.

Driving bunches of steers to the railhead for shipping, or treks from the corral to the stockyards or packers direct, or seasonal drives to more suitable grazing grounds, accompanied by the motor driven chuck

wagon, still means early morning rising and long hours in the saddle. These events do, however, have their silver lining for the grazier, particularly when the market price for beef is good.

The ever-advancing modern trends have brought additional changes to the Nevada West. Great open spaces have been lassoed and tied into submission by the service station gas-pump hose and the improved highways. Shortened by the combined attacks of these effective weapons, magnificent distances now mean only the accumulated miles a high speed motor car or a two-seater airplane can span in a few hours time. Magnificent distances over the great open spaces have not changed; Nevada still glories in them. Only the methods of closing in and conquering these long stretches of open country have changed and these changes came with a steady but decisive modern movement.

While the transition from the old to the new was in progress, cattle raising in the State maintained itself as an important business despite innumerable serious obstacles. This is fully evidenced by the fact that a United States Department of Agriculture census shows approximately 356,000 head of cattle on Nevada ranges on January 1, 1937, as compared to 349,000 the previous year, and the number of ranches on January 1, 1935, was 3,696.

For many years such vexatious problems as grazing rights, range limitations, overgrazing, water rights and priorities, branding problems, range fees, drought, low prices, winter losses, bank failures, and even cattle rustling a la motor truck have seriously hampered the progress and monopolized the attention of those engaged in the industry. Sometimes even range wars, or bloody fights between different brand outfits, have been stirred up from seemingly minor differences with serious and far-reaching results. These clashes, however, have practically disappeared from the range lands of the State in recent years.

In spite of these vexing and sometimes long-drawn-out difficulties, decided progress

This small, well-kept home, equipped with modern facilities, surrounded by lawns and flower bushes makes ranch life conditions, as found in the Washoe Valley district of western Nevada, more inviting. Nearly 50 percent of the Nevada ranches are electrically served.

Hereford cows and calves in the barnyard of an Elko County ranch. One of the largest in the State, with far-flung grazing grounds covering hundreds of square miles of wide open spaces, Elko County produces and markets a generous proportion of Nevada's beef supply.

for the stabilization of range conditions has been made and a solution of many of the problems besetting the industry seems quite probable in the future. With a more conciliatory atmosphere and normal range crops, cattle grazing and marketing as an industry has every prospect of maintaining and enhancing its importance to Nevada.

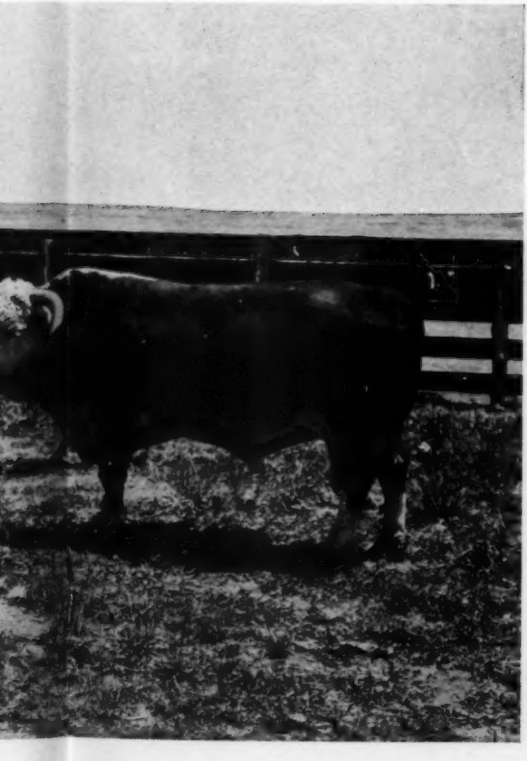
One of the more serious problems of the range concerns the water supply which comes, mainly, in the form of winter snows. The deeper the snow crop on the higher grounds and the longer it stays in the spring of the year, the more favorable the grazing conditions for the following summer. The range water problem has been attacked intelligently from various angles. In some sections where sub-surface waters of adequate supply are indicated, or have been determined by geophysical methods, well drilling for convenient and supplemental water places has brought some relief. These water sources add to the available natural supply and, when fully developed, should prove to be an important aid to the grazier and his herds.

In many sections of the State where herds are not too numerous, ranching with the objective of growing sufficient hay or forage crops to carry over from one season to the next is associated with grazing and bids fair to become at least a partial solution to sparse range conditions.

Nevada, generally speaking, consists of a series of long, narrow basins, separated by many ranges of parallel mountains striking in a nearly north and south direction. These mountains are broken in places by occasional low cross divides between the basins. The mountain ranges have tops leveling off at around 8,000 to 10,000 feet, while some of the higher peaks within the State exceed elevations of 12,000 feet. Valley floors are from 4,500 to 5,500 feet above sea level.

Upon these valley floors and mountain slopes and tops the hundreds of thousands of Nevada cattle feed on the grasses and plants while getting in condition for the markets. Of the cattle shipped, California takes approximately 97 percent, while Utah and the mid-western markets take the remainder. The value of grazing cattle on Nevada ranges during 1936 was estimated at over $11,000,000.

Well-kept ranch buildings, and fertile cultivated fields bordering an improved highway, indicates a prosperous condition for this Carson Valley ranch, having picturesque mountains as a background. Note also the circular type of haystack which is found in this broad western Nevada Valley.



Nevada Range Cattle

EVER since cattle grazing began in Nevada, improvement of the quality of the herds always has been a prime consideration of the ranchers and graziers. By experimenting with many breeds and checking results, particularly as to the hardihood of the stock, it has been found that Herefords are better suited for conditions existing on the State's grazing grounds, and produce a better quality of beef cattle from the mountain and valley forage crops than any other breed. Cattle on the grazing grounds and at the ranch yards are pictured above. Top, range riders are driving a herd of approximately 500 beef cattle from the open range in Elko County to the railhead for shipment to the markets. Lower left displays prime Hereford stock in the feeding yards of a Carson Valley ranch; while lower right shows a pair of quality Herefords.

Give the Nevada rancher a fine horse, straddled with a hand-tooled leather saddle, a dog or two to trail along over the range, a strong, trusty lariat, and his contentment is complete. A Nevada rancher, in typical western dress, on his favorite horse, is pictured above.

Cattle raising constituting a major Nevada industry, it is not unusual to sight large herds spotting valleys and hillsides in all sections of the State. Here you see hundreds of cattle in the Washoe Valley, between Reno and Carson City, feeding on wild hay and grasses.

"OLD SLOTHY" LIVED IN GYP CAVE

NATURAL underground caves always have been a source of interest and fascination to venturesome persons. A hole in the ground seems to challenge the courage and daring of both men and women. An inherent urge prompts one to enter and explore such places and determine just what mysteries are hidden from view.

Nevada has many caves scattered over its area. They are found in all sections of the State. Some have been thoroughly explored and their limitations and contents well defined. Many have been only partly explored while others, no doubt, remain to be discovered. The very nature of some of the rock formations would evidence their possible existence.

Of the known caves in the State one type is represented by great open sub-surface chambers. In these hollowed-out rooms gigantic travertine icicles are found either suspended from the ceiling or projected upward from the floor. Exquisite tints as well as fantastic shapes and outlines, in these peculiar formations, produce beautiful effects in reflected light.

Water action on limestone has formed these caves. Percolating through soluble minerals the water gradually wasted away the rock and left gaping empty caverns. Later, after centuries of attack, the ceaseless dripping of the saturated mineral-carrying waters into the hollowed-out chambers built up stalactites and stalagmites of varying proportions.

Then someone came along and found the cave opening, more likely than not, by accident. Cave openings, sometimes hardly large enough for a crawling entry, lead to corridors which are narrow and long. In turn these corridors form passageways to the underground chambers, often of incredible size.

It was only after many centuries of attack by water against limestone that such natural wonders as the Mammoth Cave in Kentucky, or the Carlsbad Caverns in New Mexico have been formed. Our own Lehman Caves in White Pine County, near Ely, as well as the partially explored Whipple Cave in Lincoln County are likewise excellent examples of huge underground cavities formed in this manner. Both of these Nevada natural wonders extend over an underground area of great expanse and contain innumerable specimens of the deeply colored and delicately patterned pendants and projections. These caves are respectful rivals, indeed, but lesser known, than those in Kentucky and New Mexico. Incidentally they are easily accessible over good highways.

Little evidence exists, however, to show that these Nevada subterranean dugouts were ever the living places of prehistoric humans or animals. Their chief mark of interest and distinction lies in their size, and the extraordinary shapes and forms built up by dripping calcareous water after the underground chambers had been hollowed.

One particular cave in Nevada, known as Gypsum Cave, has disclosed wonderous things of quite a contrary nature to white marbled icicles, and has attained great scientific importance in recent years. It has furnished artifacts which prove that at one time prehistoric men and animals lived there. Although, quite evidently, not occupied conjointly by the two, nevertheless there is sufficient proof to show that both types were contemporary.

Gypsum Cave was discovered in the early days of Nevada's period of settlement. In later years a mineral location claim was filed to cover it and, in a limited degree, developed for gypsiferous deposits.

About 20 miles northeast of Las Vegas, in the Boulder Dam area, Gypsum Cave is found in a limestone spur of the Frenchman range of mountains about 2,000 feet above sea level in a rocky desert country.

When completely excavated some years ago the cave was known to have six rooms and measured about 300 feet in length. The widest spot was about 120 feet.

The entrance measured 70 feet across with a height of about 15 feet. On passing the portal the floor sloped steeply downward, so that in a distance of 52 feet there was a drop of 34 feet to the openings of the inner rooms.

Geologists believe that between 20,000 and 30,000 years ago the land we now call Nevada, including the Gypsum Cave region, was passing through the last phases of the great Ice Age, or Glacial Period.

Ice, it is believed, still covered the higher mountains, while many of the high valleys were clogged with glaciers and the lower basins filled with water, forming great lakes. The summer's warmth melted the winter's ice and snow sufficiently to keep the lakes well replenished, and as a consequence the adjacent country was well watered—a condition favorable for prolific vegetation. That was quite a contrary condition to that which now prevails in this desert country.

Climatic conditions were suitable for such animals as the hairy mammoth, the caribou and the muskox during Glacial times. While the former type of animal has passed into extinction, the latter two types still roam the Arctic region of our own time. As the ice wasted away and retreated, other animals of different habits quite likely came into the region. Evidence of this is found in the presence of fossilized bones of the early horse, camel bones of various sizes, as well as remains of the huge lumbering hairy-hided ground sloth. This latter animal's movements were clumsy and stupid. Evidently these later types were vegetarians and found sufficient sustenance in the seeds and grasses of the times. Long sharp claws, the absence of sharp pointed teeth, combined with enormous strength, would indicate a more or less harmless disposition, unless cornered or attacked.

It was into a country and a climate of this character that the first human beings seem to have come into Nevada, and against such animals they had to struggle and pit their primitive weapons.

Little is known about the original Nevadan for his bones have not been found; only his handiwork as displayed in weapons and articles of adornment, associated with the remains of the vanished animals of the past, are left to tell the tale. Spears and darts, or javelins, hurled with the simple contrivance known as the throwing stick or atlatl, and probably clubs, were his only weapons. At least these only have been found to date. He was familiar with fire as that has been proved beyond any doubt, and he painted the shafts of his darts with colors. It has been likewise proven that

Entrance to Gypsum Cave, Clark County, Nevada, is shown in the center of the picture. The white spot is a dump where dirt from the cave has been deposited. The exploration camp, at the lower right, is circled by a narrow cane fence to protect the tents from winds.

Nothrotherium shastense Sinclair is the scientific name given to "Old Slothy." In the above pen and ink sketch his restoration has been reproduced by C. R. Knight. The giant sloth probably occupied Gypsum Cave in prehistoric time, as much evidence was found.

this primitive man hunted the animals that lived in the caves and that he, himself, camped in those caves occasionally.

The prehistoric Nevadan probably witnessed the disappearance of the colder acclimated animals, as well as the ground sloth, the horse and the camel. As climatic conditions changed he was, in turn, obliged to adapt himself to a gradual drying up of the country and the destruction of a large part of its vegetation.

Discoveries in Gypsum Cave, a dry, dusty cavern, in Clark County, indicate that man lived there before these strange animals of a former age had become entirely extinct. Fragmental discoveries were made some years ago while the cave was being developed for the gypsum deposits. Specimens unearthed at that time were sent to authorities for identification and study.

As a result of these studies the Southwest Museum of Los Angeles became interested, and in 1929 sent two men to Gypsum Cave to carry out a preliminary investigation and test. Abundant evidences of this prehistoric man—atlatl dart shafts, forked sticks, strings, fragments of chipped flint instruments as well as the important information that great deposits of dried and burnt dung were present in the inner rooms of the cave. These discoveries seemed to justify further explorations.

Consequently systematic development work was planned and carried out through 1930 and early 1931. These endeavors yielded additional evidence and innumerable artifacts, strengthening the belief that man had used the cave as a place of shelter.

Most important of all in Gypsum Cave was the finding of stone dart points, fragments of wooden dart shafts, and the remains of torches and campfires associated with the remains of the extinct Pleistocene animals. The deposits of ground sloth dung and traces of contemporary man were found buried at a depth of about eight feet.

Work of unearthing these exhibits proceeded very slowly at first and nothing of exceptional interest was found until about the first of May 1930, when a member of the exploring party, working in the cave, chanced to find a skull about a foot long and as big around as the arm of an average sized man.

This skull was identified by Dr. Chester Stock of the California Institute of Technology as belonging to the ground sloth. Professor Barnum Brown of the American Museum of Natural History in New York had identified the animal dung which was found in Gypsum Cave as belonging to the same type of animal.

The first signs of man's association with the ground sloth in the cave were noticed when a piece of finely twisted twine, made of yucca fiber, and several small feathered objects, probably remnants of a prayer stick, were found in the same dirt which contained parts of the ground sloth. A section of backbone, a huge claw with its horny covering still intact, shreds of hide, and bunches of coarse sandy hair belonging to this animal were also dug from the dirt in the cave.

This particular species of ground sloth—scientists have given him the name of *Nothrotherium shastense* Sinclair—was a cumbersome beast about the size of a large bear, the hind part being heavier while the fore part tapered off to a small skull with little brain capacity. *Nothrotherium's* lower jaw was shaped like a spout from which it stuck out a long tongue to aid in picking up bits of yucca, cactus and other desert plants. The only teeth it possessed were on the sides of the jaw. Its hide was covered with a mass of thick bristly reddish brown hair, while its only weapons of defense were its claws. These claws measured from nine to twelve inches.

That early man was attracted to Gypsum Cave while engaged in hunting was borne out by the finding of dozens of shattered darts. No human bones were unearthed at Gypsum Cave. However, many specimens of man's handicraft were present. Among these were included a flint knife with its wooden handle still held intact with pine pitch, two flutes, three gaming dice, two flint chippers of deer antler, fragments of basketry, pottery, deer hoofs used as tinklers, etc. If Gypsum Cave had not been a perfectly dry cave most of the material in it would have been decayed.

There was an inner room in Gypsum Cave which was occupied during prehistoric times by both man and the Giant Sloth. Not at the same time however. The picture shows a slide at the base and the two entrances to the inner room in which artifacts were found.

COTTON GETS NEVADA ROAD TEST

TO DETERMINE the practicability of using cotton fabric as a future road construction material in the State, the Nevada Department of Highways recently completed the installation of this material as a reinforcing surface layer over a three-mile stretch of the Pyramid Lake highway in western Washoe County. The project, carried out with the cooperation of the United States Bureau of Public Roads, was in the nature of an experiment, and is the first project of its kind to be undertaken in Nevada. A thorough test of the innovation normally cannot be fully determined for at least a year.

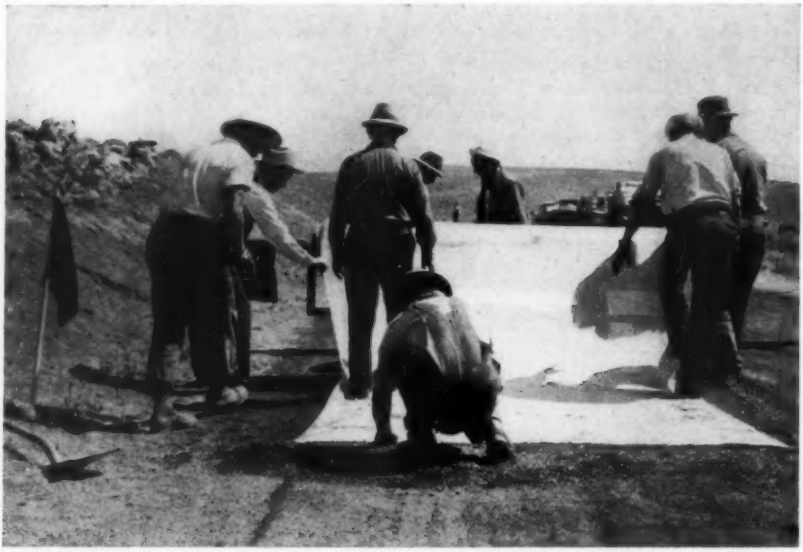
Because of climatic, moisture, and traffic conditions it is believed the Pyramid Lake highway will afford a representative test of Nevada conditions as they would affect this type of road construction.

The experiment was limited to four short sections approximating one mile each. One section was treated with the fine mesh, light-weight material, another with medium grade, while a third was treated with coarser and heavier material. A fourth contiguous section, of similar length, was marked off and given identical road surface treatment minus the cotton membrane. This fourth section is expected to provide a basis for comparison of results under very similar traffic conditions.

The bituminous wearing surface consisted of the application of emulsified asphalt and crushed rock or gravel screenings reinforced with cotton membrane placed upon a compacted oil-treated road surface of uniform grade and cross section.

The road surface consisted of the construction of a compacted, uniform and smooth surface upon the existing roadbed to a minimum width of 20 feet and with a crown not less than one tenth. The present surface was scarified and reshaped to eliminate all depressions and irregularities. Sufficient water was applied to

Spreading the penetration emulsion on the Pyramid Lake road preliminary to laying the cotton fabric. When the oil has set for a short time cotton membrane sheets are spread over the surface in 500 foot longitudinal strips with eight inch overlapping edges.



Nevada Highway Department maintenance crews laying the cotton strips at the start of the three-mile experimental section. The fabric varies in size of mesh and weight and is laid over the oiled surface. A fourth section, minus the cotton, gives a comparative test.

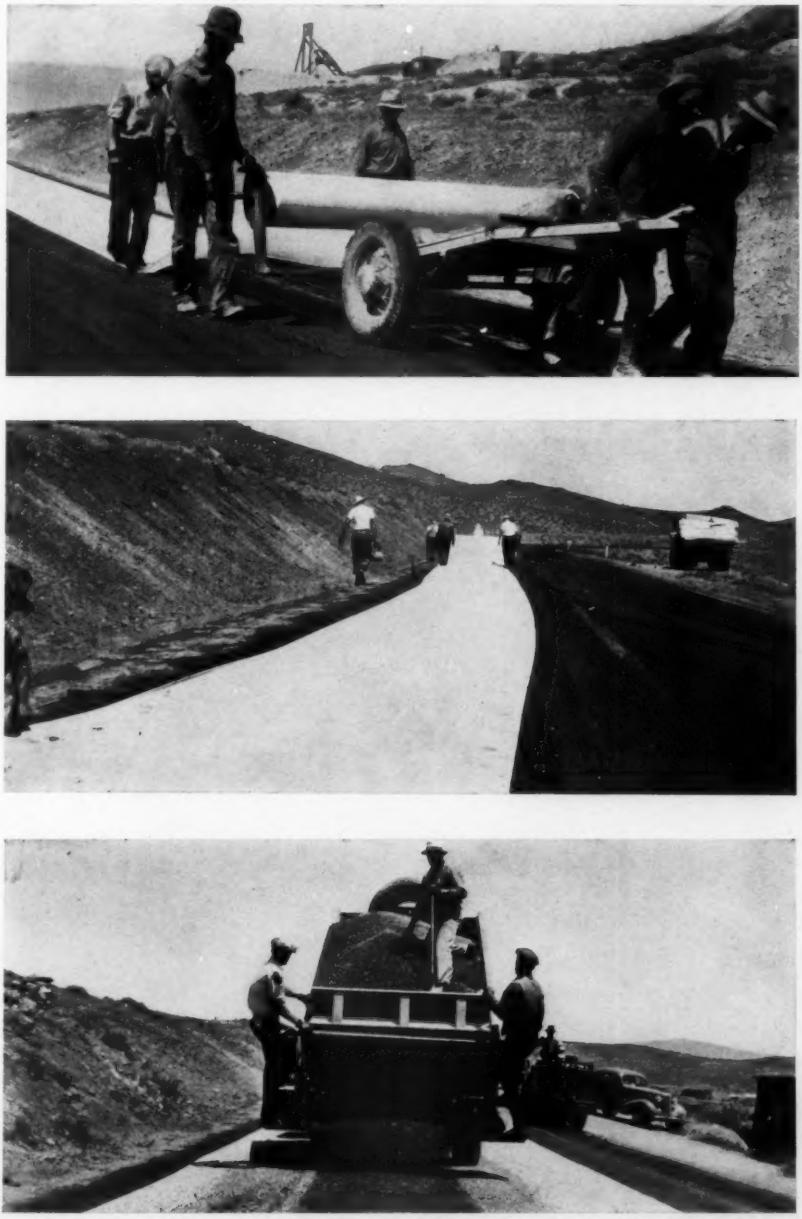
facilitate compaction after which the surface was rolled with a power roller.

After the surface was properly shaped a prime coat of asphaltic road material of the slow-curing 1A type was spread over the surface width of twenty feet at the rate of one-quarter to one-third gallon per square yard and allowed to dry. The surface was then swept free of all loose material by using either hand or power brooms.

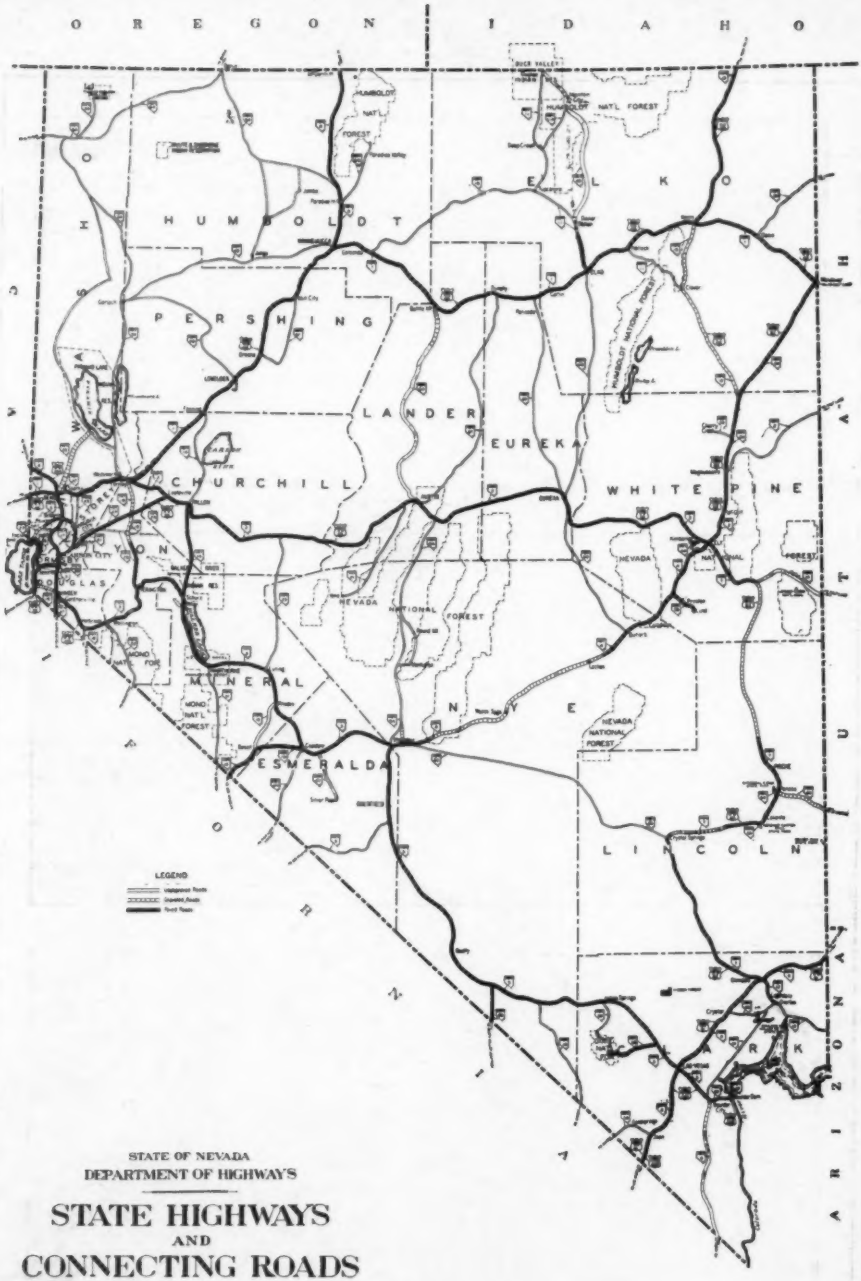
After the prime coat became thoroughly dried a tack coat of approximately one-eighth gallon of penetration emulsion was applied. Immediately after the tack coat the cotton membrane, which comes in rolls of approximately 500-foot lengths, was spread longitudinally in overlapping strips, covering the full width of the primed surface. Crushed rock or gravel screenings was then spread on the cotton membrane reinforcing material at the rate of approximately twenty pounds per square yard. A second application of penetration emulsion was then applied at the rate of one-quarter to three-eighth gallon. Crushed rock or gravel screenings was immediately spread at the rate of ten pounds per square yard, and swept lightly with a power broom, after which the surface was rolled with a self-propelled roller.

To facilitate the laying of the cotton membrane the maintenance section of the highway department devised and built, in the Reno shops, a mobile unit light enough to be hauled by two workmen. Upon this mobile unit receptacles for spindles were fastened. One cotton roll, being comparatively light in weight, was placed on the spindle and mounted on the rear of the mobile drag unit. From this unit it unraveled freely. As much as 1,800 feet of the cotton-treated surface was finished in one day.

At the selected starting point on the Pyramid Lake road the end of the cotton roll was fastened to the surface. The spindle unit was then drawn forward, the fabric unraveled, and two workers, one on each side, trampled the edges of the fabric into proper alignment. After laying, the fabric was fastened to the road surface sufficiently to hold in place. The cotton strips were laid with an overlap of approximately eight inches.



Three stages in the process of laying cotton membrane on a Nevada road. Top, fabric unraveling from the spindle as it is moved forward; center, surface appearance after cotton has been laid; bottom, spreading gravel, later power-rolled, on top of the fabric.



STATE OF NEVADA
DEPARTMENT OF HIGHWAYS

STATE HIGHWAYS
AND
CONNECTING ROADS

Statute Miles

STATE PRINTING OFFICE OF NEVADA, CARSON CITY